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# STANDARD PATENT

2001283026

I, Fatima Beattie, the Commissioner of Patents, grant a Standard Patent with the following particulars:

**Name and Address of Patentee(s):**

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**Name of Actual Inventor(s):**

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**Title of Invention:**

Liner hanger with standoffs

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**(56) Related Art**  
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comprising:

- a tubular support member defining a first internal passage;
  - an expansion cone coupled to the tubular support member defining a second internal passage fluidically coupled to the first internal passage;
  - 5 a tubular expansion cone launcher movably coupled to and mating with the expansion cone;
  - a tubular liner coupled to an end of the tubular expansion cone launcher; and
  - a shoe coupled to another end of the tubular expansion cone launcher including a valveable passage; and
  - 10 means for during a radial expansion of a portion of the solid tubular liner that does not overlap with the wellbore casing, applying substantially equal stresses to the interior surface of the portion of the solid tubular liner that does not overlap with the wellbore casing using the expansion cone.
- 15 13. In a wellbore that traverses a subterranean formation and includes a cased section having a wellbore casing and an uncased section that traverses a porous subterranean zone, wherein the operating pressure of the wellbore is greater than the operating pressure of the porous subterranean zone, a method of coupling a tubular liner to the wellbore casing of the cased section of the wellbore, comprising:
- 20 positioning a solid tubular liner and an expansion cone within the wellbore with the solid tubular liner overlapping the wellbore casing, wherein the solid tubular liner includes a resilient helical standoff coupled to the exterior surface of the solid tubular liner;
  - during the positioning of the solid tubular liner within the wellbore, the resilient helical
  - 25 standoff preventing the portion of the solid tubular liner that does not overlap with the wellbore casing from contacting the porous subterranean zone of the uncased section of the wellbore;
  - radially expanding the solid tubular liner by injecting a fluidic material into the tubular liner to pressurise the interior of the solid tubular liner and displace the expansion
  - 30 cone relative to the solid tubular liner;
  - and the resilient helical standoff preventing the portion of the solid tubular liner that does